

**Notice of Allowability**

Application No.

10/069,567

Examiner

Ernest G. Therkorn

Applicant(s)

CITTERIO ET AL.

Art Unit

1723

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to July 3, 2002.
2. ☒ The allowed claim(s) is/are 1-4 and 7-15.
3. ☒ The drawings filed on 03 July 2002 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

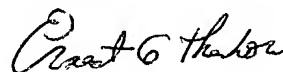
\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_



Ernest G. Therkorn  
Primary Examiner  
Art Unit: 1723

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-4 and 7-15, drawn to compounds and processes other than formula 3.

Group II, claim(s) 5, 6, and 16 drawn to a compound of formula 3 and process using a compound of formula 3.

The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features. Claim 5 is either obvious or anticipated by U.S. Patent No. 4,014,678. Accordingly, the special technical feature linking the inventions does not provide a contribution over the prior art, and no single inventive concept exists. Therefore, restriction is appropriate.

During a telephone conversation with Benoit Castel on February 12, 2004 an election was made to prosecute the invention of Group I, claims 1-4 and 7-15. Claims 5, 6, and 16 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claims 5, 6, and 16 have been cancelled.

Claims 7-15 have been amended to read as follows:

- - 7. A method of chromatographic separation comprising separating compounds with the compounds of claim 1 utilizing silica-based material.
  
- 8. A method of chiral chromatographic separation comprising separating compounds with either spheres or silica material treated with the compounds of claim 1.
  
- 9. A method of electrophoretic separation of molecules comprising separating molecules with compounds of claim 1 coated on either glass or borosilicate surfaces as used in nanotechnologies.
  
- 10. The method of claim 9, wherein the coated surfaces include chips used in hyphenated techniques, said chips being interfaced with chromatographic column, with either mass detectors or other separation/detection devices, including two-dimensional separation devices.
  
- 11. A method of separation of proteins and/or peptides comprising separating said proteins and/or peptides with capillaries treated with the compounds of claim 1 at any value of the pH scale necessary for optimizing such separations.

Art Unit: 1723

12. A method of separation of proteins and/or peptides comprising separating said proteins and/or peptides with capillaries treated with the compounds of claim 1 in both conventional buffers and amphoteric, isoelectric buffers, said buffers being either acidic, neutral, or alkaline.

13. A method of separation of oligonucleotides and DNA fragments comprising separating said oligonucleotides and DNA fragments with capillaries treated with the compounds of claim 3 in both conventional buffers and amphoteric, isoelectric buffers, said buffers being either acidic, neutral, or alkaline.

14. A method of separation of small molecules able to interact with the capillary wall or whose separation might be hampered by the EEO flow of non-conditioned capillaries comprising separating said small molecules able to interact with the capillary wall or whose separation might be hampered by the EEO flow of non-conditioned capillaries with capillaries treated with the compounds of claim 3.

15. A method of chiral separation comprising separating compounds with capillaries treated with the compounds of claim 3. - -

Authorization for this examiner's amendment was given in a telephone interview with Benoit Castel on February 12, 2004.

Prior to the first line of the first page of the specification, the following has been inserted:

- - Reference to Related Applications

This application is a 371 of PCT/EP01/01544 filed February 13, 2001 - - .

In the specification, page 7, after line 9, the following has been inserted:

- - Brief Description of the Drawings

Figure 1 reports the electropherogram pertaining to the analysis of a solution of picolinic acid, at 1mM concentration, in an uncoated capillary.

Figure 2 gives the analysis of a mixture of picolinic and nicotinic acids at 50 micromolar concentration, performed with the procedure of wall modification described in the present invention.

Figure 3 shows a separation obtained in CZE with the modifier QPzI as covered in the present invention.

Figure 4 shows the electropherogram of a mixture of seven alkanoic acids analyzed with the modifier QPzI according to procedure 1.

Figure 5A shows the electropherogram of a mixture of seven cinnamic acids analyzed with an untreated fused silica capillary.

Figure 5B shows the electropherogram of a mixture analyzed in a fused silica capillary treated with the modifier type3.

Figure 6 shows the profiles of five different proteins, injected in a covalently-coated vs. QPzI-treated capillary, respectively.

Figure 7 shows the separation of a mixture of protein with pI ranging from pH 3 to pH 10.

Figure 8 shows the ability of various additives in inhibiting protein adsorption to

the silica wall.

Figure 9 shows the ability of various additives in inhibiting protein adsorption to the silica wall.

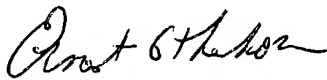
Description of the Preferred Embodiments - -

The following is an examiner's statement of reasons for allowance: DE 836937 is considered to be the closest prior art because it discloses a similar compound. The case has been allowed because the claimed structure would not have been obvious from DE 836937.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication should be directed to E. Therkorn at telephone number (571) 272-1149. The official fax number is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**Ernest G. Therkorn**  
**Primary Examiner**  
**Art Unit 1723**

EGT February 13, 2004